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Studies in the Leguminosae.—III

BY ANNA MURRAY VAIL

I. NOTES ON THE GENUS DOLICHOLUS (RHYNCHOSIA) IN THE UNITED STATES

DOLICHOLUS Medik. Vorles. Chur. Phys. 2: 354. 1787. [Bot. Beob. des Jahres 1783: 211. 1784.]

[RHYNCHOSIA Lour. Fl. Cochin. 460. 1790.]

[ARCYPHYLLUM Ell. Journ. Acad. Phila. 1: 371. 1818.]

[COPISMA E. Meyer, Com. Pl. Afric. Austr. 132. 1835-1837.]*

Key to the Species

COPISMA.—Twining, usually prostrate and trailing, or rarely more erect, perennial herbs: leaves 3-foliolate, the lateral leaflets inequilateral: flowers in slender axillary racemes or few-flowered clusters: calyx marcescent, not at all foliaceous, somewhat bilabiate, deeply 4-cleft; teeth subulate, the middle one the longest: corolla exceeding the calyx-teeth.—E. Meyer.

Racemes very slender, many-flowered, exceeding the leaves; flowers and legumes reflexed. 1. *D. minimus*.

Racemes 2-6-flowered, as long as or shorter than the leaves. 2. *D. parvifolius*.
Flowers short-pedicelled, solitary, or several together in the axils of the leaves.

3. *D. Texensis*.

Racemes short-peduncled, 2-4-flowered; bracts persistent.

4. *D. Swartzii*.

ARCYPHYLLUM.—Slender, upright or elongated perennial, often twining herbs: leaves simple or 3-foliolate; lateral leaflets inequilateral: flowers in short-peduncled, axillary, few-flowered or, crowded clusters, or rarely elongated racemes: calyx 4-parted nearly to the base, persistent, the foliaceous segments linear or oblong-lanceolate, acuminate, nearly equal, the upper ones 2-toothed: corolla not exceeding the calyx-teeth.—Ell. Journ. Acad. Phila. 1: 371. 1818.

Prostrate or climbing perennial vines.

Leaves unifoliolate or in *D. Michauxii* rarely the uppermost trifoliolate; racemes axillary.

Leaves reniform, cordate at base.

5. *D. Americanus*.

Leaves reniform, truncate at base.

6. *D. Michauxii*.

* The monotypic genus *Pitcheria*, Nutt. Journ. Acad. Phila. 7: 93. 1834, though difficult to distinguish from *Dolicholus* by any absolute characters, differs from it greatly in general appearance and habit.

Leaves trifoliate.

Racemes very short-peduncled or sessile.

Stems prostrate; leaflets cinereous.

7. *D. cinereus*.

Stems generally climbing.

Leaflets thickish, entire, ovate-rhombic.

8. *D. tomentosus*.

Leaflets thin, the margin with a few, broad rounded undulations.

D. tomentosus undulatus.

Racemes peduncled or the uppermost short-peduncled, becoming elongated.

Prostrate; leaflets apiculate, 2.5–3.5 cm. long.

9. *D. Torreyi*.

Climbing vines.

Leaflets obovate-orbicular, thin, rounded at the broad apex, narrowed at the subcordate base.

10. *D. Lewtoni*.

Leaflets ovate or ovate-rhombic, thick, velvety-pubescent; racemes commonly much elongated.

11. *D. latifolius*.

Erect perennial herbs.

Leaves unifoliate, reniform.

12. *D. simplicifolius*.

Leaves trifoliate or some of the basal ones simple.

Racemes terminal and axillary, never long-peduncled and elongated.

Stems simple, 1–2 dm. high.

13. *D. intermedius*.

Stems simple or branched.

Racemes numerous, short, axillary; leaflets thick, velvety-pubescent, acutish or obtuse.

14. *D. erectus*.

Racemes numerous, short, axillary; leaflets densely velutinous, acute.

15. *D. Drummondii*.

Racemes terminal or a few of them axillary, commonly much elongated.

16. *D. mollissimus*.

1. ***Dolicholus minimus*** (L.) Medik. Vorles. Chur. Phys. 2 : 354. 1787..

Dolichos minimus L. Sp. Pl. 726. 1753.

Glycine reflexa Nutt. Gen. 2 : 115. 1818.

Rhynchosia Caribaea Nutt. Am. Journ. Sci. 5 : 298. 1822.

Not *Glycine Caribaea* Jacq. 1786.

Glycine Lamarkii H.B.K. Nov. Gen. 6 : 424. 1823.

Glycine punctata DC. Mém. Leg. 365. 1823.

Glycine littoralis Vahl.; DC. Prodr. 2 : 385. 1825.

Rhynchosia minima DC. Prodr. 2 : 385. 1825.

Rhynchosia Caribaea DC. Prodr. 2 : 386. 1823.

Rhynchosia ervoidea DC. Prodr. 2 : 386. 1825.

Phaseolus Caribaeus Eat. & Wright. 353. 1840.

* *Rhynchosia Mexicana* Hook. & Arn. Bot. Beech. Voy. 287. 1841.

* The synonymy given here is only that which can be applied to the American plant.

In pine woods, South Carolina to Florida, Texas and southward to Brazil.

A common plant in tropical regions. Very variable. An exceedingly small-leaved and flowered form occurs on the Florida Keys.

Type in the Linnean Herbarium.

2. *Dolicholus parvifolius* (DC.)

Rhynchosia parvifolia DC. Mém. Leg. 367. 1823.

Florida ; West Indies. Apparently not common.

3. *Dolicholus Texensis* (Torr. & Gr.)

Rhynchosia Texana Torr. & Gray, Fl. N. Am. 1 : 387. 1838.

In dry soil, Texas to Arizona and North Mexico. Also in South Brazil and Argentina.

Type in the Herbarium of Columbia University.

This species has been reduced to *Dolicholus Senna* (Gillies) Kuntze (*Rhynchosia Senna* Gill. H. & A. Bot. Misc. 3 : 199. 1844). I have kept them apart here as the latter species is not very well known and will probably need further study to determine its rightful position.* There are two or even three distinct forms, of which very luxuriant ones with elongated stems and lanceolate-oblong or even linear upper leaves are *Dolicholus Texensis* var. *angustifolius* (*Rhynchosia Texana* var. *angustifolia* † Engelm. Pl. Wright. 1 : 44. 1852).

In Contribution à la Flore du Paraguay, by M. Micheli (Mem. Soc. Phys. Geneva, 28 : 1883). *Rhynchosia Texana* is maintained as distinct from *R. Senna* and a new species is described as *R. diversifolia* which apparently is very closely related to the *Dolicholus Texensis* var. *angustifolius* of North America.

4. *Dolicholus Swartzii*

Rhynchosia Caribaea Chapm. 104, 1860. Not *Glycine Caribaea* Jacquin. 1786.

A slender, somewhat twining perennial or woody vine. Stems

* I am much indebted to Mr. J. Henry Burkill for valuable notes on some South American material of this species in the Herbarium of Kew Gardens.

† *Dolicholus angustifolius* Kuntze, Rev. Gen. Pl. 3 : 60. 1898.

apparently branching at the base, slightly striate, pubescent, sparingly resinous-dotted : stipules 4 mm. long, linear-lanceolate, ciliate, reflexed, at length caducous : petioles 2-6 cm. long, slender, channelled, pubescent : leaves 3-foliolate ; terminal petiolule 8-12 mm. long ; terminal leaflets 4-5 or 6 cm. long, ovate, long-acuminate, 3-4 cm. wide, rather thin, soft pubescent on both surfaces, resinous-dotted beneath ; lateral leaflets smaller, inequilaterally ovate, commonly though not always long-acuminate : racemes 1-2 cm. long or less, 2-3 (?) -flowered, the short peduncles very slender : pedicels filiform, 3-4 mm. long, puberulent : bracts very small, persisting : calyx 3 mm. long, resinous-dotted ; teeth shorter than the tube : corolla yellow, much exceeding the calyx ; vexillum obovate, 8 mm. long, minutely puberulent and dotted with elevated yellow resinous dots or glands on the outside : ovary resinous-dotted, pubescent or bearded along the apex : legume 2.5-3 cm. long, 5-7 mm. wide, falcate, acute at the apex, tapering to the petiole, dark brown and coriaceous, pubescent, resinous-dotted : mature seeds 5-6 mm. long, oblong-ovoid, bright red.

South Florida ; Cuba.

My attention was first called to this species two years ago by a fragment in the Chapman Collection in the Herbarium of Columbia University, which purported to be *Rhynchosia Caribaea* DC. It was also labelled "South Florida, Blodgett." Somewhat later in looking over a large bundle of miscellaneous leguminous and mostly unnamed material in the Torrey Collection, I found a good original specimen of Mr. Blodgett's from Key West, with the following note : "Climbing high on trees. Flowers yellow, all seasons. Damp places." I concluded that it was an unnamed species, but owing to the uncertainty attached to the identity of *Rhynchosia Caribaea* (*Glycine Caribaea* Jacquin, Icon. Rar. t. 146. 1786), I was unwilling to undertake the responsibility of giving it a new name. Since then I have had the opportunity of examining the Jacquin plate, with which our Florida plant does not seem to have anything in common, except the shape of the legume.

Besides these two specimens, I have seen the following : Regel, no. 137, from Key West, February, 1846, ex-Herb. Shuttleworth in the Herbarium of the British Museum, where there are also two fragments labelled "Hispaniola, Dr. Swartz." In the Kew Herbarium there is a specimen of it from Wright's collecting in Cuba, no. 2323, inscribed as *Rhynchosia Caribaea* ex-Griesb. Catal. Pl.

Cubens. and another of the same extraction is in the Herbarium of the Missouri Botanic Garden.

A duplicate of Rugel's no. 137, an excellent complete specimen, is also to be found in the Herbarium of the Museum at Paris. The Rugel specimen in the British Museum Collection bears notes to the effect that the plant climbs on shrubs and that it is rare.

I have named the species in honor of Dr. Swartz, the eminent author of the *Flora Indiae Occidentalis*.

As regards the true *Rhynchosia Caribaea* there is so much misunderstanding that it would be difficult to venture an opinion in regard to its identity. In the Index Kewensis *R. Caribaea* Auct. Plur. ex Benth. Mart. Fl. Bras 15 : part 1. 205 is referred to *R. minima*, some broader-leaved forms of which certainly do resemble the plate on which *R. Caribaea* was based. The next reference in the Index is to *R. Caribaea* DC. Prodr. 2 : 384. Am. Bor. ; Ind. Occ. ; Afr. Trop. et austr. and in the same work such species as *R. acuminatum* Eckl. R. Zeyl., *R. gibba* E. Meyer, *R. inflata* and *R. malacophylla* Boj. (Mauritius), *R. intermedia* Kotschy & Peyr. and others are referred to *R. Caribaea*. I have not been able to study most of these species very critically, but as regards *R. gibba*, judging from the large collection of that plant in the Herbarium of the British Museum and elsewhere, it seems very doubtful that it belongs to the American species.

The description of *R. Caribaea* DC. agrees well with Jacquin's plate, but the distribution of the species reads "*in ins. Caribaeis, ad ripam flum. Orinoci, ex* Kunth, Nov. Gen. Am. 6. '125' (425) et in Florida occidentali." This latter locality for the plant should refer to *R. reflexa* Nutt., then given as synonym, a species which is now rightfully reduced to *R. minima* (L.) DC., so that it is probable that the true *R. Caribaea* does not occur within the limits of the United States. Quite an extensive search in London and Paris for an authentic specimen of this species met with but scant success. In the Herbarium of the Museum of Paris there is a specimen which probably belongs to *R. Caribaea*. It has the following inscription : "*Rhynchosia Caribaea* Willd. Jacq. Ic. t. 146." Pinned on the sheet after the fashion of the older herbaria is a small label with this note : "Phaseolus Madrepotanis pubescens, siliquis brevibus hirsutis horti nostri sesei [?] Ray. vol. 3, appendix.

Herbier de Vaillant." The writing on the label is supposed to be that of either Sherard or of Ray, and interlined and blurred so that a few of the words could only be guessed at. The "Herbier de Vaillant" contains many West Indian plants, among others specimens from the Antillian collection figured by Plumier,* and this specimen might have had some such provenance. In the Herbarium of the British Museum a specimen of Triana's collection in New Grenada also fairly well agrees with the Jacquin plate, as do also the specimens collected by Dr. Palmer, no. 269, from the State of Jalisco, Mexico, with, perhaps, the exception of the somewhat smaller leaves; but the latter specimens certainly are not *R. phaseoloides*, under which name they seem to have been distributed. Another plant, exactly matching Palmer's, was collected by Fred. Muller, no. 1768, in Mexico, in 1853. (Herb. Columbia Univ.) It has the very hirsute legume which is so marked a characteristic of the figure of *R. Caribaea*.

In Hemsley, *Biologia Centr. Am.* 1: 310, the distribution of *R. Caribaea* is given as South Mexico, near Tantoyuca (Ervenberg, no. 35) and "common in the West Indies and the northern part of South America; also in Tropical and South Africa." I have not seen the Ervenberg specimen, nor have I seen any South African specimens of *R. gibba*, which satisfied me as being identical with the plant figured by Jacquin. It proves a most interesting species, and it is to be hoped that these very incomplete notes will call the attention of collectors to it and possibly bring about a better knowledge of it and of its geographical distribution.

5. *Dolicholus Americanus* (Miller)

Lathyrus Americana Miller, *Gardn. Dict.* no. 19. 1768.

Rhynchosia menispermoidea DC. *Mém. Leg.* 364. 1823.

Phaseolus menispermoidea Eat. & Wright, *N. Am. Bot.* 353. 1840.

Texas to South Mexico.

* Plumier's Herbarium of West Indian plants is preserved in the Herbarium of the Jardin des Plantes at Paris, where it is easily accessible to students. It consists of ten folio volumes, the specimens glued on the pages and numbered. They are in various stages of preservation and are especially valuable as being the originals of the figures in the *Fasciculi Plantarum Americanum* and of many Linnean types as well as the "Herb. Surian'" of De Candolle's *Prodromus*.

Type in the Herbarium of the British Museum. For the record of the identification of this species see the article on Houston's Central American Leguminosae by James Britten and E. G. Baker in Journal of Botany for June, 1897.

6. *Dolicholus Michauxii*

Rhynchosia Michauxii Vail, Bull. Torr. Bot. Club, **22**:458. 1895.

Rhynchosia menispermoides Chapm. Fl. 105. 1860. Not DC.
Dry pine barrens, Florida.

Type in the Herbarium of Columbia University.

7. *Dolicholus cinereus* (Nash)

Rhynchosia cinerea Nash, Bull. Torr. Bot. Club, **22**:149. 1895.
High pine lands, Lake County and Pelican Key, Florida.

Type in the Herbarium of Columbia University.

8. *Dolicholus tomentosus* (L.)

Glycine tomentosa L. Sp. Pl. 754. 1753.

Glycine tomentosa volubilis Michx. Fl. Bor. Am. **2**:63. 1803.

Glycine tomentosa Pursh, Fl. Am. Sept. 486. 1814. Excluding var.

Arcyphyllum difformis Ell. Journ. Acad. Philad. **1**:371. 1818.

Rhynchosia difformis DC. Prodr. **2**:384. 1825. ?

Rhynchosia tomentosa H. & Pl. Comp. Bot. Mag. **1**:23. 1835.
Excluding the specimens.

Rhynchosia volubilis Wood, Bot. & Fl. 96. 1873. Not *R. volubilis* Loureiro, 1793.

The Linnean description of the species includes "*Ononis caule volubile*" Gronov. 81 and "*Anonis phaseoloides scandens, floribus flavis sessilibus*" Dill. Elth. 30 t. 26. f. 29, where the illustration is a good one of the plant as it is known on our eastern seaboard. The Clayton plants referred to are represented by two specimens in the Herbarium of the British Museum, one of *Glycine tomentosa*, the plant as figured by Dillenius, and one of the erect, oblong-leaved species described by Walter in 1788 as *Trifolium erectum*.

A specimen of the twining *Glycine tomentosa* is also in the Linnean Herbarium.

In dry soil, Virginia to Florida, Mississippi and probably also in Texas.

***Dolicholus tomentosus undulatus* n. var.**

Perennial. Stems slender, twining, angled and striate, minutely and retrorsely hirsute: petioles 2-4 cm. long, angled, hirsute: stipules ovate, 3-4 mm. long, ciliate, persisting: leaves 3-foliolate; terminal petiolules 8 mm. to 5 cm. long; terminal leaflets oval or orbicular-oval, 2-4 cm. long, wide, obtuse or subacute, thinnish, minutely pubescent on both surfaces, with a few broad undulations on the margins; lateral leaflets inequilaterally ovate, 2-4 cm. long: racemes subsessile, 1-4- or 5-flowered: calyx 8-9 mm. long, pubescent, ciliate, resinous-dotted; lobes oblong, lanceolate, acuminate, foliaceous: corolla orange-yellow? nearly as long as the calyx or barely exceeding it when expanded; vexillum minutely puberulent near the apex and ciliate: legume 1.5-1.8 cm. long, oblong, obliquely acute, 5-7 mm. wide, minutely pubescent, resinous-dotted and hirsute with longer scattered hairs especially on the sutures, 2-seeded: seeds nearly 4 mm. long, semi-orbicular, shining, grayish with lighter and also dark brown markings.

Thickets and fields near Jacksonville, Florida, Chapman, 1846. (Herb. Mo. Bot. Gard.); N. Am. Pl. Curtiss, no. 660, July; Curtiss, no. 4256, July 6, 1893. (Distribution from the U. S. Nat. Herb.); Second Distr. Pl. Southern States, Curtiss, no. 4903. July 6-17, 1894.

9. *Dolicholus Torreyi*

Rhynchosia Torreyi Vail, Bull. Torr. Bot. Club, **22**: 459. 1895.

Rhynchosia latifolia β Torr. & Gray, Fl. N. Am. **1**: 285. 1838.

Not *R. latifolia* Nutt.

Sand hills, Texas, Dr. Leavenworth. Apparently not since collected.

Type in the Herbarium of Columbia University.

10. *Dolicholus Lewtoni*

Rhynchosia reticulata? Chapm. Fl. Ed. 3, 115. 1897. Not DC.

Soft pubescent and minutely resinous-dotted throughout. Stem prostrate, 3-5 dm. long or more, 4-angled, spreading or obscurely retrorse hirsute-pubescent, apparently not twining at the summit: stipules obliquely lanceolate, 6-8 mm. long: petioles rather distant, 4-6 cm. long, angled: terminal leaflets dilated or obovate-

orbicular, 4-6 cm. long, 4-8 cm. wide, commonly broadest above the middle, broadly rounded and sometimes slightly retuse at the apex, narrowly subcordate at the base; lateral leaflets obliquely obovate-oblong; venation reticulated: upper racemes sessile, 2-4 cm. long, the other on peduncles 2-4 cm. long; bracts lanceolate, 3-4 mm. long, slender: calyx 9-10 mm. long; segments foliaceous, exceeding the glabrous yellow corolla. Legume not seen.

Dry sandy soil, Orange County, Florida, F. L. Lewton, July 7, 1894.

Allied to *D. Michauxii* Vail, from which it differs in the trifoliolate, abnormally large leaves, which are notably broadest above the middle and with narrow and less prominent subcordate bases. The calyx and corolla are also smaller than those of *D. Michauxii* and the racemes are longer.

Type in the Herbarium of Columbia University.

11. *Dolicholus latifolius* (Nutt.)

Rhynchosia latifolia Nutt.; Torr. & Gr. Fl. N. Am. 1: 285. 1838.

Phaseolus latifolius Eat. & Wright, N. Am. Bot. 353. 1840.

In dry soil, Missouri to Texas and Louisiana.

Very variable. A low erect or sub-erect form with short or sub-sessile racemes has been collected in Texas by Lindheimer and in Missouri by B. F. Bush and may possibly be distinct.

12. *Dolicholus simplicifolius* (Walt.)

Trifolium simplicifolium Walt. Fl. Car. 184. 1788.

Glycine tomentosa var. *monophylla* Michx. Fl. Bor. Am. 2: 63. 1803.

Glycine reniformis Pursh, Fl. Am. Sept. 2: 486. 1814.

Glycine monophylla Nutt. Gen. 2: 115. 1818.

Arcyphyllum simplicifolium Ell. Journ. Acad. Phila. 1: 371. 1818.

Glycine simplicifolia Ell. Sk. 2: 234. 1825. Not H. B. K.

Rhynchosia reniformis DC. Prodr. 2: 384. 1825.

Rhynchosia tomentosa var. *monophylla* Torr. & Gray, 1: 284. 1838.

Phaseolus reniformis Eat. & Wright, N. Am. Bot. 353. 1840.

Psoralea alnifolia Bert. Mem. Acad. Sci. Bolog. 2: 274. 1849.

Rhynchosia simplicifolia Wood, Bot. & Fl. 96. 1873.

In dry soil, Virginia to Florida, west to Louisiana.

Type in the Herbarium of the British Museum.

13. **Dolicholus intermedius** (Torr. & Gr.)

Rhynchosia tomentosa β *intermedia* Torr. & Gray, Fl. N. Am. 1: 285. 1838.

Psoralea alopecurina Bertol. Mem. Acad. Sci. Bolog. 2: 275. pl. 14. f. 2. 1849.

Stems erect, simple or possibly with 1 or 2 branches, angled, soft pubescent-tomentose, especially on the angles, 1.2–3 dm. high; stipules obliquely lanceolate, 6–9 mm. long, striate, red-brown, persistent; petioles 2.5–5 cm. long, densely pubescent; basal leaves simple; blades nearly orbicular or rhombic-orbicular, obtuse or depressed; upper leaves or only the uppermost 3-foliolate; terminal leaflet 2.5–5 cm. long, oval to ovate-orbicular, obtuse, sparingly pubescent above, pubescent and rugosely veined beneath when old; lateral leaflets obliquely oval or oblong, 2–3 cm. long, mucronulate, some of them subcordate at base; racemes terminal and axillary, sessile or short-peduncled; bracts lanceolate-linear, 1 cm. long, red-brown, pubescent outside, glabrous within; calyx 8–9 mm. long; teeth slender, veined, pubescent, resinous-dotted; corolla yellow; vexillum glabrous, the teeth at the base much shorter than the claw; legume not seen.

Allied to *D. simplicifolius* from which it differs in the 3-foliolate upper leaves, and generally taller and larger habit.

Georgia to Florida and Alabama. May to June.

Type in the Herbarium of Columbia University.

14. **Dolicholus erectus** (Walt.)

Trifolium erectum Walt. Fl. Car. 184. 1788.

Glycine tomentosa var. *erecta* Michx. Fl. Bor. Am. 2: 63. 1803.

Glycine erecta Nutt. Gen. 2: 114. 1818. ?

Arcyphyllum erectum Ell. Journ. Acad. Phila. 1: 372. 1818.

Rhynchosia erecta DC. Prodr. 2: 384. 1825.

Glycine Caroliniana Spreng. Syst. 3: 197. 1826.

In dry soil, Delaware to Florida, west to Tennessee and Louisiana. Very variable.

Type apparently lost.

An oblong-leaved, rather remarkable form of this species has

been collected by Hall in Louisiana, in Salisbury, Maryland [Herb. Canby], and in Mississippi by W. L. McGee.

15. *Dolicholus Drummondii*

Rhynchosia tomentosa Hook. & Arn. Comp. Bot. Mag. 1 : 23. 1835. Not Linn.

Perennial, erect, densely velutinous-tomentose, 1.5–3 dm. high. Stems angled, a little undulate above : stipules lanceolate, acuminate, becoming reflexed, caducous ; petioles 3–5 cm. long, angled and velutinous : leaves 3-foliolate ; terminal leaflets oblong-lanceolate or a few of them oblong, 3–6 cm. long, 2–3 cm. wide, acute, densely velutinous tomentose on both surfaces, silvery above, the whole lower surface dotted with numerous orange-colored glands beneath the tomentum and the prominent veins reticulated beneath ; lateral leaflets narrower, inequilateral, acute ; racemes sessile or very short peduncled : bracts 2.5 mm. long, linear-setaceous, caducous : calyx 6 mm. long, foliaceous, tomentulose and ciliate, resinous-dotted, the upper lobe 2-toothed to considerably below the middle : corolla included in the calyx, apparently a deep orange-yellow color ; vexillum round-ovate, the auricles at the base rounded, minutely glandular-puberulent on the outer surfaces : legumes not seen.

Louisiana : Covington, Drummond, 1832 ; North Carolina : New Bern, Croom and Loomis, 1834.

Very close to *D. erectum* from which it differs in the acute leaflets, dense tomentum and somewhat smaller flowers.

Type specimens in the Herbarium of Columbia University.

16. *Dolicholus mollissimus* (Ell.)

Glycine mollissima Ell. Bot. 2 : 235. 1824.

Rhynchosia tomentosa var. ? *mollissima* Torr. & Gray, Fl. N. Am. 1 : 285. 1838.

Rhynchosia mollissima S. Wats. Biblio. Ind. 1 : 256. 1878.

Rhynchosia tomentosa var. *erecta* Chapm. Fl. 105. 1884. In part.

Stems erect, commonly simple, 3–6 dm. high, angled above, not flexuous, clothed with a close fine soft pubescence : stipules 6 mm. long, red-brown, lanceolate, acuminate ; leaves rather remote, 5–9 cm. long ; petioles 2.5–5 cm. long ; leaflets oval or oval-oblong, acutish, 2.4–4.5 cm. long, 2–3.5 cm. wide, minutely apiculate, obscurely emarginate, clothed with a short pubescence, es-

pecially on the reticulated, resinous-dotted under surface ; terminal leaflet the largest, the others not conspicuously inequilateral ; racemes terminal, elongated, 6 cm.—1.8 dm. long, with often few, short racemes in the axils of the upper leaves : flowers scattered along the whole length of the often crowded rhachis : calyx 6—8 mm. long, pubescent, resinous-dotted, 4-parted about two-thirds to the base ; teeth lanceolate : corolla yellow ; vexillum glabrous, the spurs of the claw obtuse : legume oblong, 2 cm. long, 6 mm. wide, attenuated below, somewhat rounded on the ventral suture, with a short, acute, slightly curved acumination : seed nearly orbicular, 2.5 mm. broad, flattened : seeds ovoid, 4 mm. long, brown, mottled.

In pine barrens, Florida.

II. NOTE ON PAROSELA

The following species has been identified with *Parosela Arizona*:

Parosela Lumholtzii (Rob. & Fern.)

Dalea Lumholtzii Rob. & Fern. Proc. Am. Acad. **30**: 115. 1894.

Parosela Arizona Vail, Bull. Torr. Bot. Club, **24**: 14. 1897.

Vicinity of Tucson, Arizona ; Las Pinitos, Sonora, Mexico.

COLUMBIA UNIVERSITY, March, 1899.